REMARKS

The Official Action mailed December 30, 2003, has been received and its contents carefully noted. Filed concurrently herewith is a *Request for One Month Extension of Time*, which extends the shortened statutory period for response to April 30, 2004. Also, filed concurrently herewith is a *Request for Continued Examination*. Accordingly, the Applicants respectfully submit that this response is being timely filed.

The Applicants note with appreciation the consideration of the Information Disclosure Statements filed on October 14, 1999, April 9, 2001, December 12, 2001, March 21, 2002, September 20, 2002, and September 30, 2003.

With respect to the IDS filed December 12, 2001, reconsidered by the Examiner on December 29, 2003, and attached to the Official Action mailed December 30, 2003, it is understood that all of the references cited were fully considered by the Examiner and should appear on the face of a patent resulting from the present application. It is noted that the Examiner crossed through the references on January 2, 2002, and following explanation by the Applicants (see Interview Summary, Paper No. 32) initialed the references on December 29, 2003. In order to ensure that these references are properly printed on the face of the patent upon allowance and in order to avoid any potential confusion on the record, the Applicants submit herewith a clean copy of the PTO Form 1449 submitted with the IDS filed December 12, 2001, and request that the Examiner initial this clean copy to evidence consideration of the references cited therein.

A further IDS is submitted herewith and consideration of this IDS is respectfully requested.

Claims 15-24, 28, 30-115 and 123-176 were pending in the present application prior to the above amendment. Claims 28, 46, 53, 60, 67, 74, 81 and 172-176 were amended to correct minor typographical and grammatical errors, and new claims 177 and 178 have been added to recite additional protection to which the Applicants are entitled. Accordingly, claims 15-24, 28, 30-115 and 123-178 are now pending in the

present application, of which claims 15, 17, 20, 22, 28 and 30-35 are independent. For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

Paragraph 2 of the Official Action rejects claims 20, 22, 23, 102-115, 174 and 175 as anticipated by JP 10-135469 to Yamazaki et al. Paragraph 3 of the Official Action rejects claims 20, 22, 23, 102-115, 174 and 175 as anticipated by U.S. Patent Application Publication No. 2002/0100937 to Yamazaki et al. The Applicants respectfully traverse the rejection because the Official Action has not established an anticipation rejection.

As stated in MPEP § 2131, to establish an anticipation rejection, each and every element as set forth in the claim must be described either expressly or inherently in a single prior art reference. Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

The Applicants respectfully submit that an anticipation rejection cannot be maintained against the independent claims of the present invention. Yamazaki '469 and '937 do not teach all the elements of the independent claims, either explicitly or inherently.

The Official Action asserts that Yamazaki '469 and '937 teach that "as a result of the heating treatment ... 'an extremely superior interface' is created" (page 8, Paper No. 35, citing paragraphs [0058], [0064] and [0112] of Yamazaki '469 and paragraphs [0075], [0084] and [0137] of Yamazaki '937). However, the Applicants note that paragraph [0052] of Yamazaki '469 and paragraph [0070] of Yamazaki '937 disclose that a heat treatment is performed in an atmosphere containing hydrogen chloride (HCl) of 0.5 to 10 vol. % with respect to an oxygen (O_2) atmosphere. However, independent claims 20 and 22 recite a reducing atmosphere and a reducing atmosphere including a halogen element, respectively. The Applicants respectfully submit that Yamazaki '469 and '937 do not teach a reducing atmosphere or a reducing atmosphere including a halogen element, either explicitly or inherently.

Also, new dependent 177 and 178, which depend from independent claims 20 and 22, respectively, recite that asperities of a surface of a crystalline semiconductor thin film are formed by the second heat treatment, and that the asperities are flattened by the third heat treatment. However, paragraph [0052] of Yamazaki '469 and paragraph [0070] of Yamazaki '937 disclose that roughness is formed on a film surface of a crystalline silicon film if the concentration of HCl is more than the above concentration, which means that HCl of the above concentration is added to the oxygen atmosphere in order to prevent the formation of roughness. Yamazaki '469 and '937 do not teach that roughness is prevented by another means. Therefore, Yamazaki '469 and '937 do not teach that asperities of a surface of a crystalline semiconductor thin film are formed by a second heat treatment, and that the asperities are flattened by the third heat treatment, either explicitly or inherently.

Since Yamazaki '469 and '937 do not teach all the elements of the independent claims, either explicitly or inherently, an anticipation rejection cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 102 are in order and respectfully requested.

Paragraph 5 of the Official Action rejects claims 15-24, 28, 30-115 and 123-176 under the doctrine of obviousness-type double patenting over claims 1-18 of co-pending U.S. Patent Application Serial No. 09/894,125 to Yamazaki et al. and claims 1-32 of co-pending U.S. Patent Application Serial No. 09/369,158 to Yamazaki et al.

As stated in MPEP § 804, under the heading "Obviousness-Type," in order to form an obviousness-type double patenting rejection, a claim in the present application must define an invention that is merely an obvious variation of an invention claimed in the prior art patent, and the claimed subject matter must not be patentably distinct from the subject matter claimed in a commonly owned patent. Also, the patent principally underlying the double patenting rejection is not considered prior art.

Regarding the provisional obviousness-type double patenting rejection based on Yamazaki '125, the Applicants respectfully request that the double patenting rejection

be held in abeyance until an indication of allowable subject matter is made in the present application. At such time, the Applicants will respond to any remaining double patenting rejections.

Regarding the provisional obviousness-type double patenting rejection based on Yamazaki '158, the Applicants note that Yamazaki '158 has issued as U.S. Patent No. 6,559,036. With respect to independent claims 15, 17, 28 and 30-35 and new dependent claims 177 and 178, Yamazaki '036 does not claim at least that asperities of a surface of a crystalline semiconductor thin film are formed by a laser light (or by a second heat treatment), and that the asperities are flattened by a further heat treatment. With respect to independent claims 20 and 22, Yamazaki '036 does not claim at least carrying out a second heat treatment of irradiating the crystalline semiconductor thin film with ultraviolet light or infrared light.

The Applicants respectfully submit that the subject application is patentably distinct from the claims of the '158 patent. Reconsideration of the obviousness-type double patenting rejection is requested.

Paragraph 6 of the Official Action rejects claims 15, 16, 20, 21, 28, 30-115 and 123-176 under the doctrine of obviousness-type double patenting over the combination of claims 1-77 of co-pending U.S. Patent Application Serial No. 10/081,767 and U.S. Patent No. 5,907,770 to Yamazaki et al.

Regarding the provisional obviousness-type double patenting rejection based on Yamazaki '767, the Applicants respectfully request that the double patenting rejection be held in abeyance until an indication of allowable subject matter is made in the present application. At such time, the Applicants will respond to any remaining double patenting rejections.

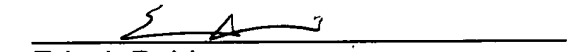
With respect to independent claims 15, 17, 28 and 30-35 and new dependent claims 177 and 178, Yamazaki '770 does not claim at least that asperities of a surface of a crystalline semiconductor thin film are formed by a laser light (or by a second heat treatment), and that the asperities are flattened by a further heat treatment. With

respect to independent claims 20 and 22, Yamazaki '770 does not claim at least carrying out a second heat treatment of irradiating the crystalline semiconductor thin film with ultraviolet light or infrared light.

The Applicants respectfully submit that the subject application is patentably distinct from the claims of the '770 patent. Reconsideration of the obviousness-type double patenting rejection is requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,



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Potomac Falls, Virginia 20165
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BOX AFTER FINAL
EXPEDITED PROCEDURE
740756-1996

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT application of:

Shunpei YAMAZAKI et al.

Application No.: 09/352,362

Filed: July 13, 1999

For: CRYSTALLINE SEMICONDUCTOR THIN FILM METHOD OF FABRICATING THE SAME, SEMICONDUCTOR DEVICE, AND METHOD OF FABRICATING THE SAME

Art Unit: 2815

Examiner: Jose R. DIAZ

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on 12-12-01

S. Strain

INFORMATION DISCLOSURE STATEMENT

Commissioner of Patents
Washington, D.C. 20231

December 12, 2001

Dear Sir:

In accordance with the provisions of 37 C.F.R. 1.56 and 37 C.F.R. 1.97-1.99, it is requested that the references listed on the attached Form PTO-1449 be made of record in the above-identified application. A copy of the references are submitted herewith in accordance with 37 C.F.R. 1.98(a). Also attached is a check in the amount of **$180.00** for the statutory disclosure fee.

The Commissioner is hereby authorized to charge fees under 37 C.F.R. §§1.16, 1.17, 1.20(a), 1.20(b), 1.20(c), and 1.20(d) (except the Issue Fee) which may be required now or hereafter, or credit any overpayment to Deposit Account No. 19-2380.

Respectfully submitted,

NIXON PEABODY, LLP

By _____
Luan C. Do
Reg. No. 38,434

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 2

Complete if Known	
Application Number	09/352,362
Filing Date	July 13, 1999
First Named Inventor	Shunpei YAMAZAKI et al.
Group Art Unit	2815
Examiner Name	Jose R. DIAZ
Attorney Docket Number	740756-001996

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	U.S. Patent Document Number	Kind Code[2] (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		4,986,213		Yamazaki et al.	01/22/1991	
		5,147,826		Liu et al.	09/15/1992	
		5,365,875		Asai et al.	11/22/1994	
		5,426,064		Zhang et al.	06/20/1995	
		5,461,250		Burghartz et al.	10/24/1995	
		5,569,610		Zhang et al.	10/29/1996	
		5,616,932		Sano et al.	04/01/1997	
		5,639,698		Yamazaki et al.	06/17/1997	
		5,696,386		Yamazaki	12/09/1997	
		5,712,191		Nakajima et al.	01/27/1998	
		5,843,833		Ohtani et al.	12/01/1998	
		5,846,869		Hashimoto et al.	12/08/1998	
		5,854,096		Ohtani et al.	12/29/1998	
		5,869,363		Yamazaki et al.	02/09/1999	
		5,879,977		Zhang et al.	03/09/1999	
		5,888,857		Zhang et al.	03/30/1999	
		5,897,347		Yamazaki et al.	04/27/1999	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Office[3]	Number[4]	Kind Code[5] (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

Examiner Signature		Date Considered	

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Sheet	2	of	2

Complete if Known	
Application Number	09/352,362
Filing Date	July 13, 1999
First Named Inventor	Shunpei YAMAZAKI et al.
Group Art Unit	2815
Examiner Name	Jose R. DIAZ
Attorney Docket Number	740756-001996

U.S. PATENT DOCUMENTS

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		5,910,015		Sameshima et al.	06/08/1999	
		5,923,966		Teramoto et al.	07/13/1999	
		5,956,579		Yamazaki et al.	09/21/1999	
		5,960,323		Wakita et al.	09/28/1999	
		5,985,740		Yamazaki et al.	11/16/1999	
		5,994,172		Ohtani et al.	11/30/1999	
		6,023,074		Zhang	02/08/2000	
		6,054,739		Yamazaki et al.	04/25/2000	
		6,071,766		Yamazaki et al.	06/06/2000	
		6,093,937		Yamazaki et al.	07/25/2000	
		6,096,581		Zhang et al.	08/01/2000	
		6,121,076		Zhang et al.	09/19/2000	
		6,124,154		Miyasaka	09/26/2000	
		6,180,439		Yamazaki et al.	01/30/2001	
		6,285,042		Ohtani et al.	09/04/2001	

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